

Union of Soviet Socialist Republics
USSR State Committee for Inventions and Discoveries

SPECIFICATION OF AN INVENTION
for an Inventor's Certificate
(11) 823285

(51) Int. Cl.³ C 01 B 33/32
(53) UDC 661.183.6(088.8)
(61) Additional to Inventor's Certificate -
(22) Filed 07.03.79 (21) 2767410/23-26
with incorporation of Application No. -
(23) Priority -
Published 23.04.81 Bulletin No. 15
Date specification published 23.04.81

(72) Inventor S.G. Babayan, M.G. Popov and L.I. Arutyunyan
(71) Applicant Erevan Inorganic Materials Department of the All-Union
Order of the Red Banner of Labour Scientific Research
Institute for Chemical Reagents and High-Purity Chemicals

(54) METHOD OF PRODUCING SODIUM CALCIUM SILICATE

The invention relates to the production of sodium calcium silicate and may be used for making special-purpose optical glasses.

A method is known for producing sodium calcium silicate, for use in glass-making, which includes the reaction of sodium metasilicate, calcium metasilicate

A disadvantage of the known method is the low degree of purity of the desired product and the complexity of the technological process.

The object of the invention is to simplify the process and to increase the

degree of purity of the desired product.

The stated object is achieved in that a solution of sodium silicate and calcium hydrosilicate with the composition $\text{CaO} \cdot 3\text{SiO}_2 \cdot x\text{H}_2\text{O}$ are reacted, this being performed at 70-95°C over 1-2 h.

Silicate with the formula $\text{CaO} \cdot 3\text{SiO}_2 \cdot x\text{H}_2\text{O}$ is obtained by a known method.

The method is performed in the following manner.

A solution of sodium silicate and calcium hydrosilicate with the composition $\text{CaO} \cdot 3\text{SiO}_2 \cdot x\text{H}_2\text{O}$ is stirred in a reactor for 1-2 h. The resultant suspension is then dried at 200-220°C to a moisture content of 2-4 wt.% in the desired product.

Example. In order to produce 1 kg of sodium calcium silicate (composition), 6.55 litres of a solution of sodium silicate $\text{SiO}_2/\text{Na}_2\text{O} = 3.0$ (concentration of $\text{Na}_2\text{O} = 30 \text{ g/l}$, of $\text{SiO}_2 = 90 \text{ g/l}$) are charged into a reaction vessel with a stirrer, and 275 g of $\text{CaO} \cdot 3\text{SiO}_2 \cdot x\text{H}_2\text{O}$ are added with continuous stirring, with subsequent dewatering at 95°C for 2 h. The resultant viscous mixture is then dried in a quartz dish at 220°C to a moisture content of 2-4 wt.% in the product.

The sodium calcium silicate contains contaminants at the level of $1 \cdot 10^{-4}$ wt.%,

Claims

1. Method of producing sodium calcium silicate, for use in glass-making, including reaction of a silica-containing compound and calcium silicate while heating, with subsequent drying of the resultant product, characterized in that, with the object of simplifying the process and increasing the degree of purity of the sodium calcium silicate, a solution of sodium silicate and calcium hydrosilicate with the composition $\text{CaO} \cdot 3\text{SiO}_2 \cdot 4\text{H}_2\text{O}$ are reacted

2. Method according to Claim 1, characterized in that the reaction is performed at a temperature of 70-95°C for 1-2 h.

Sources of information considered in the examination

1. USSR Inventor's Certificate No. 147585, cl. C 01 B 33/32, 1961.

2. USSR Inventor's Certificate in respect of Application No. 2648077/26, cl. C 01 B 33/32, 1978.